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**THE WHITE HOUSE
WASHINGTON**

February 7, 1964

**MEMORANDUM FOR: THE SECRETARY OF DEFENSE
THE CHAIRMAN, UNITED STATES INTELLIGENCE
BOARD**

SUBJECT: The National Signals Intelligence Program

The enclosed memorandum on the subject, dated January 30, 1964, was submitted by the President's Foreign Intelligence Advisory Board following its consideration of a detailed study made by the Board's Signals Intelligence Panel. The Board's memorandum includes five recommendations for action to supplement its previous proposals, which were approved by President Kennedy, for strengthening the national capability for the collection and processing of signals intelligence under leadership supplied by the Department of Defense through the National Security Agency.

The President has deferred further action on the Board's current recommendations pending the receipt of views and comments of the departments and agencies primarily concerned. Accordingly, it is requested that views and comments on the enclosed recommendations be submitted to this office and to the President's Board, as follows:

- a. A report by the Secretary of Defense concerning Recommendations 2, 3 and 5; and
- b. A joint report by the Secretary of Defense and the Chairman, United States Intelligence Board, concerning Recommendations 1 and 4 (it being noted that these recommendations encompass subject matters extending to areas of interest on the part of the intelligence community at large).

It would be appreciated if you would forward the reports to this office and to the President's Board by March 15, 1964.

OSD REVIEW COMPLETED

NSA review(s) completed.

Enclosure (SC-101431/64) **TOP SECRET** McGeorge Bundy

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SC 01431/64

January 30, 1964

MEMORANDUM
on the
NATIONAL SIGNALS INTELLIGENCE PROGRAM

In our report of June 26, 1962, the Board made specific recommendations with a view to strengthening our national capability for the collection and processing of vital signals intelligence which is obtainable through intercepts of: (1) electronic communications and associated emanations (Communications Intelligence -- COMINT), and (2) electronic signals characteristic of such intelligence targets as radars, defensive and offensive weapons, and space vehicle telemetry (Electronics Intelligence -- ELINT).

The Board's recommendations were made in recognition of certain factors which in our judgment warrant continuing priority attention: (1) the mounting role of Signals Intelligence (SIGINT) in estimation of complex international security intentions and maneuvers; (2) the corresponding increase in size, cost, and difficulty of global and even space-borne signals intelligence collection and analysis, and the accompanying demands on all national resources, particularly those of the Department of Defense; (3) the correspondingly high selectivity which must be exercised in order to economize on cost and use of scarce technical talent; (4) the opportunities for organizational improvement in the National Security Agency (NSA) which must be the centralized and prime source for the capabilities noted above; and (5) the unprecedented demands for insight and wisdom within the intelligence community in prescribing priority intelligence objectives which can often be fulfilled only by signals intelligence elements operating in land, sea, atmosphere and space environments.

Specifically, the Board has recommended and President Kennedy approved the following actions to be taken under the auspices of the Secretary of Defense: (1) the establishment of strong control and management by NSA over its vast signals intelligence resources; (2) the exercise of strong leadership within NSA in meeting national intelligence requirements rising beyond particular military needs and responsibilities; (3) the supervision by NSA of all types of signals intelligence collection and processing as a long-term principle, and the exercise of that supervision in such a manner that national needs will best be served without undue expansion of effort and costs; (4) the exercise by the Department of Defense of more extensive leadership of NSA activities now that an

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Assistant Secretary of Defense has been designated for this purpose; (5) the completion of long-pending efforts to formulate a national Electronics Intelligence (ELINT) plan for improved collection and processing of electronics intelligence; and (6) a refinement by the U. S. Intelligence Board of its issuance of intelligence priorities which form the basis for specific signals intelligence collection tasks.

We consider that these objectives remain valid, and that their accomplishment will continue to serve our national security interests. We note with approval certain efforts which have been pursued within the Department of Defense and the National Security Agency in response to the recommendations which have been made. We note that these efforts have for the most part so far taken two forms:

(1) The device of the Consolidated Cryptologic Program (CCP) which is proposed by the Director of NSA as a translation of U. S. Intelligence Board requirements into specific intercept and processing tasks to be performed by NSA and the Military Services, subject to inter-agency review and the approval of the Secretary of Defense. This device actually illustrates compactly the continuing difficulty of assuring optimum output in the expensive operation based on intercepts of signals, when the separate Service Cryptologic Agencies function in dual relation to the national mission of the NSA and to the constantly shifting field interests of the Service Commanders. Accordingly, we shall comment later on methods of technical study that could lead to greater speed and economy in this diverse cryptologic program;

(2) Efforts now rounding out their third year to formulate a national ELINT plan which would suitably engage all the national capabilities for electronics intelligence, in assignments yielding thrifty and timely information on rockets, missiles, space vehicles, radars, foreign air activity and related non-verbal signalling. Here, we are deeply concerned by progressive delays in the implementation of such a plan, and urge that immediate adoption be directed of operational improvements derived from the study up to now. If modifications, for instance, 25X1

25X1 are later necessary and administrative issues have further to be debated, this should be done without the present damaging and costly delays in assigning technical control to the National Security Agency, as was ordered some years ago in NSCID No. 6. For instance, even modern control of tape collection techniques would cause large gains. Meanwhile new centers for ELINT analysis are being established without coordination, terms of reference or technical guidance from our proven competency in established programs. Also the seemingly interminable debates about special functions in the national ELINT plan have permitted the extension of situations previously deplored. Examples are the diffuseness and inadequacy of providing suitable ELINT priorities and requirements according

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to the present practices, where field and theatre commanders readily can confuse local objectives with what appear to be national demands, with the result that there is little assurance of selective but deep views of foreign military activity as required for major national strategic decisions.

Recognizing values from these efforts which are now under way and emphasizing the need for their continuance, the Board feels that reasons for supplementary actions are now compelling, in order to prepare for fuller realization of the potential of signals intelligence collection and processing. We feel this is necessary to meet the diversity of current national needs which seem likely to multiply

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the immediate future. Further, these same actions will be vital in preparing us to meet priority intelligence needs of the next five to ten years. As we have noted before, we remain convinced that speed of national security reaction required in the coming decade can frequently be met only by the most powerful SIGINT technology and operations.

Accordingly, based upon the results of a study recently completed, by the Signals Intelligence Panel of the Board, we submit the following recommendations:

1. Evaluation of the Signals Intelligence Product. The Board recommends that steps be taken to introduce generally effective evaluation techniques into the signals intelligence community, with a view to ensuring the objective assignment to the signals intelligence community of tasks and priorities derived from a realistic estimate of the value of the intelligence likely to be produced. (We concur in the Panel's observation that the desired techniques can only be evolved through a comprehensive study of the entire signals intelligence operation, including the sources of such intelligence, its processing, and the ultimate use made of it. We suggest such a study be made through the combined efforts of signals intelligence experts within Government and outside experts in the field of modern management techniques. We believe that the recent extensive study of documentation and information handling within the community, known as the SCIPS Study, gives an important access to methods of evaluation, since for the first time a comprehensive and manageable survey of the articulation of the intelligence product and circulation to its users has been made.)

2. Systems Analysis and Operations Research. The Board recommends that there be established at NSA headquarters a special operations research and systems analysis group, under scientifically strong leadership, with responsibility for conducting a continuing study of the vast collection, message handling and data processing activities of the National Security Agency as a means of accomplishing improvements in such areas as (a) the efficiency with which intercept

positions are allocated to coverage of particular intelligence targets, (b) the sampling of intelligence returns as the basis for possible reduction in the intercept from some targets, and (c) message handling and data processing all the way from intercept to the finished product. (We suggest that effective implementation of this effort will require that the proposed group have access to all NSA activities falling within the scope of its continuing study. We also feel that, through a contract with some organization such as the Institute for Defense Analyses, the group would be kept scientifically viable and would be provided an effective means of recruiting highly qualified personnel.)

An activity parallel to the operations research and systems analysis group should be embodied in a systems experiment group. This group, not necessarily located at NSA Headquarters, should have capability for systems trials with experimental equipment for various schemes of intercept analysis, information flow, and so forth. Of particular importance are modern facilities for systems simulation in which, without the inevitable encumbrances of field operations, valid trials of new operating procedures could be derived. It is realized that the creation of such a resource is a major undertaking, exceeding even in organizational problems the now highly successful IDA-FOCUS group. It may be that by contract mechanisms the exterior resources could be kept down to consultation only, and the present NSA efforts in this field would simply be augmented.

Accordingly it is suggested that the National Security Agency may wish to arrange for a study of the most pressing functions and opportunities for both a Headquarters group and an auxiliary for experimental activity. Probably some among the various outside scientific connections of the NSA would be available for such an immediate study which ought to involve such things as independent observations of major overseas intercept points, communication relays, and so forth.

3. Scientific Inadequacies in Research and Development. The Board recommends that, as a means toward meeting developments made urgent by the changing nature of technology and the signals intelligence environment, longer-range studies be undertaken by NSA or its contractors with a view to achieving the following:

(a) Improvement in the state of the art of locating an opponent's radio transmitters by direction finding methods which presently appear to be technically feasible. (We suggest that for the purpose of access to the physicists and facilities required for the propagation studies involved, this study could best be accomplished through NSA's establishment of a separate contract facility, or through contract with a qualified university. Indeed some of the current contract research in this area could gainfully be considerably expanded.)

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(b) The automating and compacting of all, or a large part, of an intercept station--for example, through the development of miniaturized, isolated and covert facilities for signals intelligence collection. A study leading to such facilities would concentrate particularly upon co-location of direction-finding and intercept and would extend the promising beginnings already made by the National Security Agency. (We suggest that the combination of high analytical and electronic skills required for such a study could be provided by various possible NSA contractors.)

4. Scientific and Technical Foresight. As a supplement to, but distinct from the operations research and systems analysis group, the Board recommends that there be established under NSA sponsorship a suitably camouflaged captive corporation having responsibility for scientific and technical foresight through research and development, to prepare the Agency for its oncoming tasks. Thus, along with having requisite access to the operations of agencies in the intelligence community, this technical agency should provide research and development so that there is early attainment of capabilities in such fields as electronic intercept and audio intercept. In this way, the forefront of modern electronics, science and engineering can be coupled to oncoming needs of the National Security Agency and of the whole SIGINT community. Further, this effort would suitably enhance the Headquarters' research and engineering efforts, many of which have to be directed to shorter-range needs. Also, inevitably the responsibility for progress in such subjects as audio surveillance heavily related to electromagnetic signal surveillance, should strengthen the total technical operations so that the whole intelligence community will be benefitted.

5. Future of Communications Security (COMSEC). The Board recommends that the National Security Agency initiate a long-range study with a view to producing (a) an evaluation of the COMSEC requirements of on-coming communications systems, and (b) a strengthened program of research and development that is adequately responsive to present and future communications environments. (We note that over-dependence on present encryption methods may well have to give way to the use of one-time pads which we understand can be produced and stored photographically at virtually no cost and which would involve the use of much smaller encryption machines than presently employed. We feel that COMSEC studies must be integrated with studies of communications networks and of our rapidly developing National Communications System, particularly in the light of new policies on strategic weaponry and command-and-control which favor extensive secure voice networks and secure data transmission.)

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